

The opinion in support of the decision being entered today
is *not* binding precedent of the Board

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte REIJO LYLYKANGAS,
VELI-MATTI VEKKI, KEIJO KESKITAO,
and ERKKI NARHI

Appeal 2007-3994
Application 10/072,906
Technology Center 1700

Decided: September 26, 2007

Before CHARLES F. WARREN, THOMAS A. WALTZ, and
JEFFREY T. SMITH, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

DECISION ON APPEAL

Applicants appeal to the Board from the decision of the Primary Examiner finally rejecting claims 27 through 31 in the Office Action mailed March 1, 2006. 35 U.S.C. §§ 6 and 134(a) (2002); 37 C.F.R. § 41.31(a) (2006).

We affirm the decision of the Primary Examiner.

Claim 27 illustrates Appellants' invention of a method of manufacturing a metal reactor cell, and is representative of the claims on appeal:

27. A method of manufacturing a metal reactor cell that has overlapping corrugated sheets and a housing, the method comprising the steps of preoxidizing the overlapping corrugated sheets, and after the preoxidizing step joining the preoxidized sheets simultaneously to each other and to at least part of the housing by resistance welding.

The Examiner relies upon the evidence in these references:

Cairns	GB 1 546 097	May 16, 1979
Chapman	US 4,331,631	May 25, 1982
Kono	US 5,403,558	Apr. 4, 1995
Usui	US 5,620,666	Apr. 15, 1997
Matsumoto	US 6,288,008 B1	Sep. 11, 2001

Appellants request review of the following grounds of rejection advanced on appeal¹ (Br. 2-3):

claims 27, 30 and 31 under 35 U.S.C. § 103(a) as unpatentable over Usui in view of Kono (Answer 4²);

claims 27, 30 and 31 under 35 U.S.C. § 103(a) as unpatentable over Matsumoto in view of Kono (*id.* 5);

claims 28 and 29 under 35 U.S.C. § 103(a) as unpatentable over Usui or Matsumoto in view of Kono as applied to claim 27, further in view of Chapman and Cairns (*id.* 5); and

claims 27 through 30 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement (*id.* 6).

¹ The ground of rejection under 35 U.S.C. § 112, second paragraph, is withdrawn by the Examiner (Answer 3).

² The Examiner modified the first and second grounds of rejection under 35 U.S.C. § 103(a) by withdrawing Chapman (Answer 2-3).

Appellants argues claim 27 as representative of the claims in the first and second grounds of rejection (Br. 3-6). Appellants apply the arguments to the third ground of rejection (*id.* 6). Thus, we decide this appeal based on claim 27. 37 C.F.R. § 41.37(c)(1)(vii) (2006).

The issues in this appeal are whether the Examiner has carried the burden of establishing a prima facie case in each of the grounds of rejection advanced on appeal.

The plain language of the claim 27 specifies a method of manufacturing a metal reactor having overlapping corrugated sheets and a housing comprising at least the step of preoxidizing the sheets and the subsequent step of simultaneously joining, that is, fixing, the preoxidized sheets to each other to any extent and to at least a part, however small, of the housing to any extent by resistance welding. The transitional term “comprising” opens the claim to include methods having additional steps, and thus, methods having the step of fixing the overlapping sheets to each other to any extent before or after preoxidizing and prior to further joining the overlapping sheets to each other and simultaneously to at least a part of the housing. *See, e.g., Vehicular Technologies Corp. v. Titan Wheel Int’l Inc.*, 212 F.3d 1377, 1383, 54 USPQ2d 1841, 1845 (Fed. Cir. 2000); *Genentech Inc. v. Chiron Corp.*, 112 F.3d 495, 501, 42 USPQ2d 1608, 1613 (Fed. Cir. 1997); *In re Baxter*, 656 F.2d 679, 686, 210 USPQ 795, 802 (CCPA 1981).

We first consider the ground of rejection under § 112, first paragraph, written description requirement. Appellants have rebutted the Examiner’s contention that embodiments encompassed by the claims were not disclosed

in the Specification by pointing to the passage therein establishing that one of ordinary skill in this art would have recognized Appellants were in possession of the claimed invention encompassed by the claims, as we interpreted them above, at the time the Application was filed. *See, e.g., In re Alton*, 76 F.3d 1168, 1175-76, 37 USPQ2d at 1581, 1583-84 (Fed. Cir. 1996) (citing *In re Wertheim*, 541 F.2d 257, 262-64, 191 USPQ 90, 96-97 (CCPA 1976)).

Accordingly, in the absence of a prima facie case of non-compliance with this statutory provision, we reverse this ground of rejection.

Turning now to the grounds of rejection under § 103(a), we agree with the Examiner's findings of fact from Usui, Matsumoto, Kono, Chapman, and Cairns in the Answer to which we add the following. We find Usui would have disclosed to one of ordinary skill in this art a method of fixing overlapping corrugated sheets to each other to any extent, and to at least a part of a housing to any extent in forming a metal reactor by, among other things, fixing fewer contact areas of these materials by welding than by brazing, using, among other things, electric welding (Usui, e.g., col. 4, ll. 12-15, and col. 7, ll. 39-54). Usui discloses that the overlapping corrugated sheets can be fixed together to the extent this assembly can be inserted into a housing, and the assembly and the housing fixed together by, among other things, welding, thus simultaneously fixing the sheets in the assembly to each other and to the housing (*id.*, e.g., col. 6, ll. 51-60).

We find Matsumoto would have disclosed to one of ordinary skill in this art a method of fixing overlapping corrugated sheets to each other to any extent and to at least a part of a housing to any extent in forming a metal

reactor, by contacting an assembly of sheets in the housing and the housing with a bonding material applied across the sheet assembly and the housing, heating the bonding material by, among other things, welding, thus simultaneously fixing the sheets in the assembly to each other and to the housing (Matsumoto, e.g., col. 2, ll. 33-46, col. 3, ll. 42-59, and Fig. 1).

We find Kono would have disclosed to one of ordinary skill in this art a method of fixing corrugated and flat sheets to each other to any extent and to at least a part of the jacket, that is, housing, to any extent in forming a metal reactor, by forming an assembly of the sheets, inserting the assembly into the housing and joining the sheets to each other and to the housing, using, among other things, resistance welding, thus simultaneously fixing the sheets in the assembly to each other and to the jacket (Kono, e.g., col. 5, ll. 55-62, col. 7, ll. 13-15, Figs. 1 and 2, and Embodiment 1).

We determine the combined teachings of Usui and Kono, of Matsumoto and Kono, and of Usui, Matsumoto, Kono, Chapman, and Cairns, the scope of which the Examiner has determined and we made additional findings from above, provide convincing evidence supporting the Examiner's case that the claimed invention encompassed by claim 27, as we interpreted this claim above, would have been *prima facie* obvious to one of ordinary skill in the metal reactor arts familiar with forming metal reactors. We agree with the Examiner's position in stating the grounds of rejection and in responding to Appellants' arguments, to which we add the following for emphasis. We agree with the Examiner (Answer 3, 4, 7, and 9-10) that, contrary to Appellants' position (Br. 3-4 and 5-6), one of ordinary skill in this art following the teachings of Usui and of Matsumoto would have

assembled preoxidized corrugated sheets into an assembly to be inserted into a housing. Indeed, this person would have recognized the benefits of preoxidizing the sheets prior to assembling the same into a cell structure because as assembled, oxidation of the sheet surfaces would be more difficult. *See, e.g., In re Sovish*, 769 F.2d 738, 743, 226 USPQ 771, 774 (Fed. Cir. 1985) (skill is presumed on the part of one of ordinary skill in the art); *In re Bozek*, 416 F.2d 1385, 1390, 163 USPQ 545, 549 (CCPA 1969) (“Having established that this knowledge was in the art, the examiner could then properly rely, as put forth by the solicitor, on a conclusion of obviousness ‘from common knowledge and common sense of the person of ordinary skill in the art without any specific hint or suggestion in a particular reference.’”). We further agree with the Examiner (Answer 6) that in the absence of evidence, Appellants have not established that an oxidized surface cannot be brazed (Br. 4-5). *See, e.g., In re Lindner*, 457 F.2d 506, 508, 173 USPQ 356, 358 (CCPA 1972) (“This court has said . . . that mere lawyers’ arguments unsupported by factual evidence are insufficient to establish unexpected results. [Citations omitted.]”). We additionally point out, in this respect, that Usui would have disclosed, among other things, electric welding as an alternative to brazing, and Appellants’ argument does not address whether an oxidized surface interferes with this fixing option.

Appellants do not contest the application of Kono and Chapman (Br. 6).

Accordingly, based on our consideration of the totality of the record before us, we have weighed the evidence of obviousness found in the

combined teachings of Usui and Kono, of Matsumoto and Kono, and of Usui, Matsumoto, Kono, Chapman, and Cairns, with Appellants' countervailing evidence of and argument for nonobviousness and conclude that the claimed invention encompassed by appealed claims 27 through 31 would have been obvious as a matter of law under 35 U.S.C. § 103(a).

In summary, we have reversed the ground of rejection under 35 U.S.C. § 112, first paragraph, written description requirement, and have affirmed all of the grounds of rejection under 35 U.S.C. § 103(a), the latter grounds encompassing all of the claims.

The Primary Examiner's decision is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv) (2007).

AFFIRMED

clj

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